

B R E V I O R A

Museum of Comparative Zoology

CAMBRIDGE, MASS.

JULY 15, 1964

NUMBER 205

REDESCRIPTION OF *AMPHISBAENA DUBIA* MÜLLER (AMPHISBAENIA: REPTILIA)¹

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This note provides a standardized (Gans and Alexander, 1962) redescription of *Amphisbaena dubia* Müller, 1924, and adds many new records for the species, extending its range from São Paulo into Paraná and Santa Catarina. I am grateful to Mr. W. C. A. Bokermann for the gift of two specimens. The following curators of institutions (referred to in abbreviations throughout) placed me in their debt by loan of material: Miss Alice G. C. Grandison of the British Museum (Natural History), London (BM); Drs. Paulo E. Vanzolini and A. Stanley Rand of the Departamento de Zoologia, São Paulo, S. P., Brazil (DZ); Dr. Ernest E. Williams of the Museum of Comparative Zoology (MCZ); Dr. Konrad Klemmer of the Senckenbergischen Naturforschenden Gesellschaft, Frankfurt a. M., Germany (SMF); Dr. Joseph Eiselt of the Naturhistorischen Museums zu Wien, Austria (VM); and Dr. Heinz Wermuth [formerly] of the Zoologischen Museums der Universität, Berlin, Germany (ZMU). Specimens in the Gans collection are referred to by the letters CG. Dr. Virginia Cummings figured the specimens and Miss Charlyn Rhodes contributed technical assistance. The over-all project owes its support to Grant NSF G-21819 from the National Science Foundation.

¹Notes on amphisbaenids, 12.

AMPHISBAENA DUBIA MÜLLER

Amphisbaena dubia Müller, 1924, p. 86. Terra typica: "Piracicaba, Staat São Paulo, Brasilien." HOLOTYPE: ZMU 26394.

[Not=*A. dubia* Rathke, 1863; cf. Gans, 1961, p. 220; China, 1963, p. 197.]

Diagnosis: A medium sized form of *Amphisbaena* without major fusions of head shields; with one or more pairs of large parietals; with a blunt-tipped cylindrical tail without autotomy constriction or autotomy; and with two clear round precloacal pores in males and none [or two very faint indications only] in females. Specimens have 213 to 231 body annuli; 13 to 17 caudal annuli; 13 to 16 (generally 14 or 16) dorsal and 16 to 19 (generally 16 or 18) ventral segments to a midbody annulus; and two rows of postgenials and no postmalars. The color of preserved specimens is a light brown faintly countershaded. Segments bear a light brown circular spot.

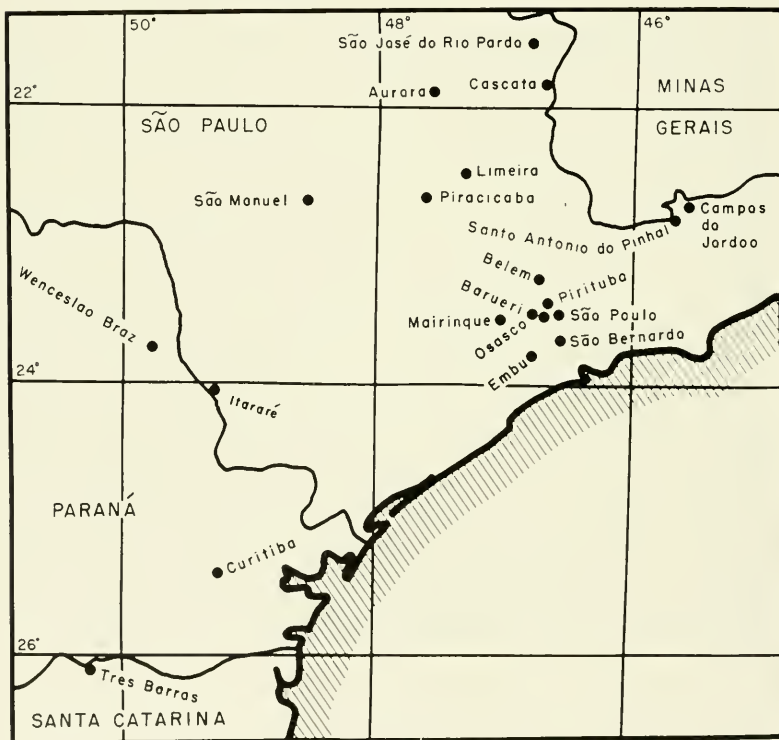


Fig. 1. *Amphisbaena dubia*. Sketch map showing localities mentioned in text.

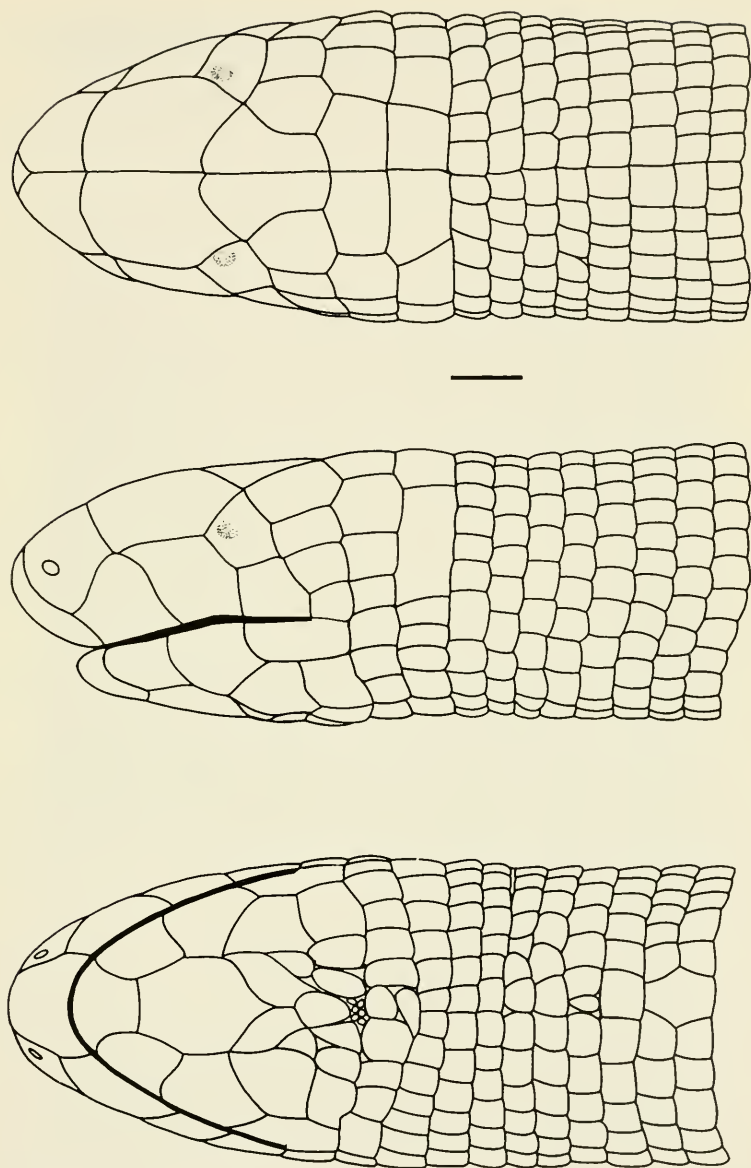


Fig. 2. *Amphisbaena dubia*. Dorsal, lateral and ventral views of the head of the holotype, ZMU 26394. The line equals 1 mm to scale. (V. Cummings, del.).

Discussion: The holotype was available for examination and its assignment poses no problems. The specimen is slightly faded, but otherwise in excellent condition.

The name *A. dubia* of Rathke (1863, p. 128), a senior homonym of *A. dubia* Müller, refers to *Amphisbaena fuliginosa* ssp. (cf. Gans, 1961, p. 220) and has been suppressed under Opinion 664 (China, 1963, p. 197).

The examination of the British Museum specimen confirms Vanzolini's (1949) statement that Boulenger (1885) had included an individual of *A. dubia* in the series upon which he based his concept of *A. vermicularis* Wagler.

It is interesting that the samples show no geographic variation.

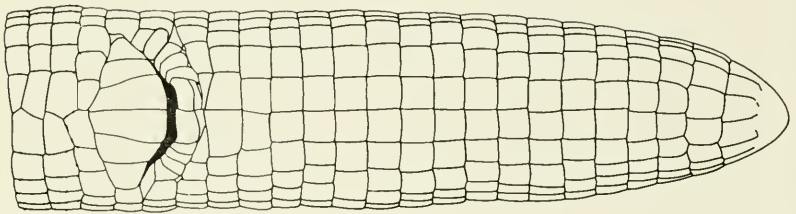


Fig. 3. *Amphisbaena dubia*. Ventral view of cloaca and tail of the holotype. The line equals 1 mm to scale. (V. Cummings, del.).

Description: Figure 2 shows views of the head, Figure 3 the ventral surface of the cloaca and tail, and 4, 5, and 6 photographic details of the coloration and other aspects of the specimens. Figure 7 gives a scatter diagram of tail versus snout-vent length. Meristic data are listed in the table.

This is a medium sized species of *Amphisbaena*, of a light tan color in preservative with faint countershading. The pigment is evenly distributed across the segments and appears to fade out ventrally. The dorsal midbody segments show a light circular spot in the center of each segment.

The head segmentation is characterized by lack of major fusions. An azygous rostral barely visible in dorsal view is followed by four or five pairs of enlarged cephalic shields in contact along the dorsal midline. The nostrils pierce the first pair (nasals). The second pair (prefrontals) are the largest segments of the head. There are two and one-half or three supra- and two and

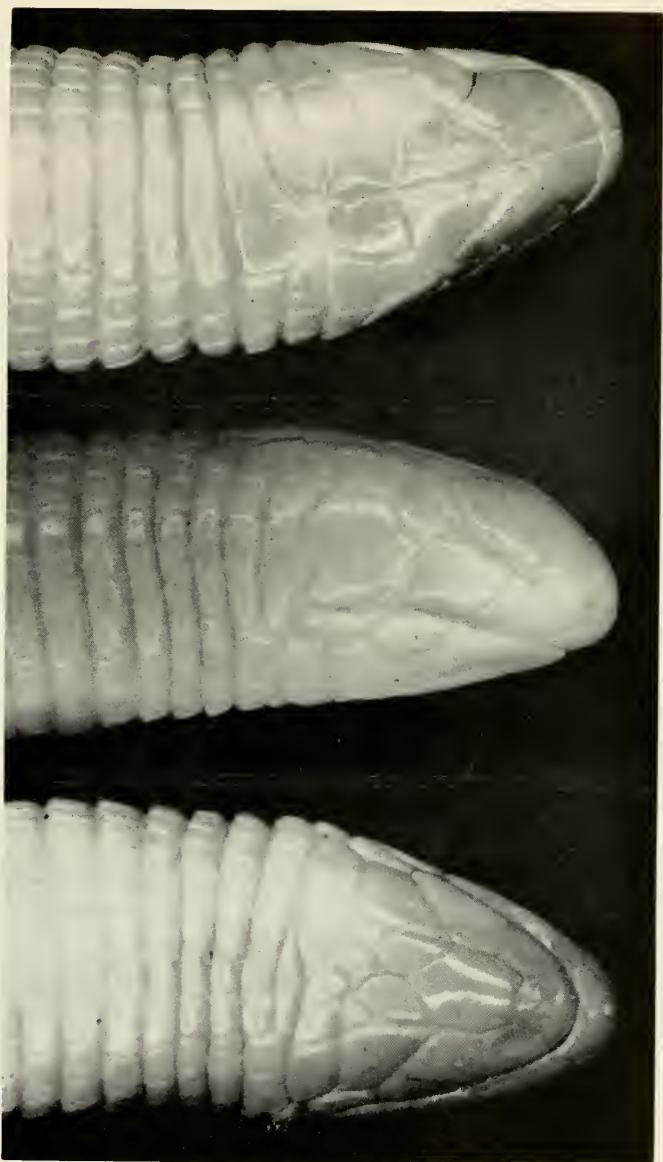


Fig. 4. *Amphisbaena dubia*. Dorsal, lateral and ventral views of SMF 11813 from Curitiba, Paraná.

one-half (or three) infralabials with the third infralabial extending considerably beyond the angulus oris. The supralabials are large, the second largest and the first next in size. The first two sutures incline anteriorly at an angle of approximately 45° , the last ascends the snout almost vertically. The angulus oris lies anterior to the suture between frontals and parietals. The ocular is quadrangular.

The mental is of approximately the same size as the first infralabials. The second infralabials are clearly the largest in the row, while the postmental is the largest segment on the lower jaw. Posteriorly its tip is inserted between the two large, tear-drop shaped first postgenials which in some specimens keep the postmental from even point-contact with the malars. The second postgenials are irregular. Occasionally a segment from this row extends forward to contact the postmental. The row back of the malars is counted as the first body annulus since it falls posterior to the angular oris: there are thus no postmalars.

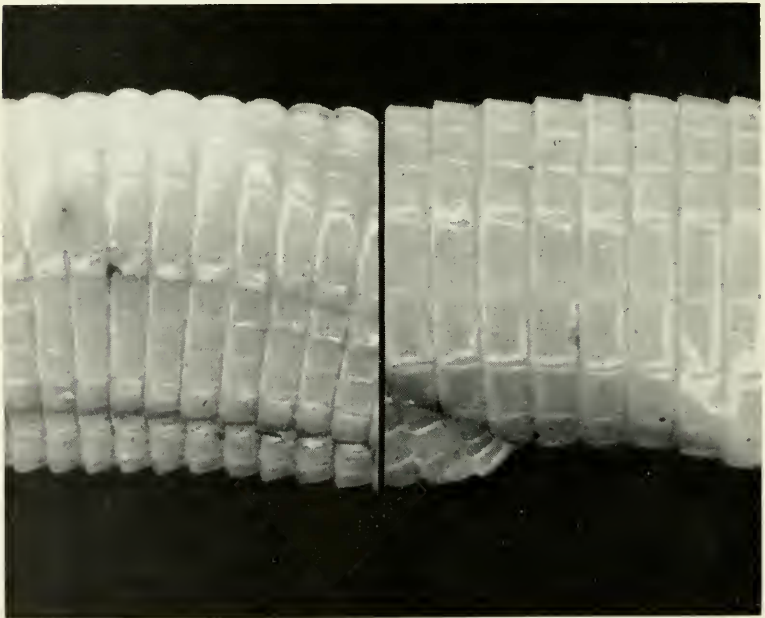


Fig. 5. *Amphisbaena dubia*. Dorsal (left) and ventral (right) views of the holotype, ZMU 26394, at midbody to show size of segments. The pigment has faded too much to be discernible.

Dorsally, the first body annulus curves anteriorly, becoming wider to form the segments of the temporal-postocular row and abut to the lateral edges of the frontals. In a few specimens there is a splitting of this row giving a semblance of a dorsal intercalated half-annulus. The second row includes the relatively large first parietals as its dorsalmost segments. The second parietals are ordinarily not elongate and their anterior and posterior sutures generally run in parallel, at right angles to the long axis of the trunk. Enlargement, if present, occurs



Fig. 6 *Amphisbaena dubia*. Dorsal, lateral and ventral views of tail of male specimen (CG 2093). Note clearly marked precloacal pores which are absent in females (cf. Fig. 3).

mainly by broadening (or fusion) of the middorsal segments into a pair of second parietals.

The head is relatively blunt, flattened slightly dorsoventrally and oval in cross-section. The lower jaw is but slightly shorter than the upper. The temporal muscles are only faintly indicated by swelling in these presumably adult specimens. The nuchal region is very faintly constricted.



Fig. 7. *Amphisbaena dubia*. Scatter diagram of tail versus snout-vent length for all specimens.

There are 213 to 231 body annuli from the angulus oris up to and including the [pore-bearing] precloacals. The third through fifth or seventh are modified by being narrower and curving anteriorly on the ventral surface. There is often one intercalated dorsal half-annulus or asymmetric annulus both in the fifteen postcephalic, and the ten precloacal annuli. Otherwise the "pectoral" region shows no complexing of segments. There are 13 to 16 (generally 14 or 16) dorsal and 16 to 19 (generally 16 or 18) ventral segments to a midbody annulus.

The cloacal region is characterized by two small round pre-cloacal pores in males and none or at best a very faint indication in females. Five to eight precloacal and nine to 15 post-cloacal segments fringe the cloacal slit. There is no autotomy annulus and the species appears incapable of autotomy. Caudal annuli number 13 to 17. The tail is wider than high in cross-section with a tendency toward ventral flattening. The distal half is faintly swollen and finally tapers very rapidly toward a faint vertical ridge on its tip.

The lateral sulci are clearly marked, starting after the first fifth of the body length and proceeding to the level of the cloaca. At midbody each of them is as wide or wider than one of the adjacent segments, and filled with broken segments and diagonal folding lines that enter the inter-annular sutures at an angle that generally cuts off the corners of the bordering segments. The dorsal and ventral sulci are indicated only by alignment of the intersegmental sutures.

The dorsal segments of a midbody annulus are approximately one and one-half times as long as wide, while the midventral segments range between one and a quarter to one and three-quarters times as wide as long.

Habits: The Curitiba specimen contained three elongate eggs each encased in a very thin leathery shell. The posterior and best formed one measured approximately 9×17 mm *in situ*.

Range: Eastern portions of the states of São Paulo, Paraná, and northern Santa Catarina, Brazil.

Distribution records: BRAZIL: _____, (Boulenger, 1885; Vanzolini, 1949); BM 1961.2023. *São Paulo:* "Inland" _____, MCZ 20655-20657; VM 12335-4. São José do Rio Pardo, DZ 6442. Cascata, DZ 6432. Aurora, DZ 6439. Limeira, DZ 6436. Piracicaba, (Müller, 1924); ZMU 26394 (holotype). São Manoel do Paraíso (=São Manuel), DZ 1266, 1266B, 6520. Santo Antonio do Pinhal, DZ 6440. Belem, DZ 2425. Pirituba, DZ 6438. São Paulo, DZ 7053, 7676. Osasco, DZ 7054. Barueri, CG 2092-2093. Mairinque, DZ 6433. São Bernardo do Campo, DZ 1284. Embu (=Embu Guagu), DZ 6461. Itararé, DZ 6443. *Paraná:* Wenceslao Braz, DZ 6667. Curitiba, SMF 11813. *Santa Catarina:* Tres Barras, DZ 6437.

Data for specimens of Amphisbaena dubia Müller

Collection and number	Sex	A N N U L I		SEGMENTS		Labials	Chin	Cloacal	Length
		Body+Lat.+Tail	Dors.+Vent.	Dors.+Vent.	Supra+Infra				
BM 1961.2023	♂	223+3+15	14+16-17	3+2-1/2	2-4-(7)	2-6-13	205+17		
MCZ 20655	♀	224+3+13	15+18	3+2-1/2	2-3-(7)	2F-6-12	268+21		
MCZ 20656	♀	226+3+15	14+18	3+2-1/2	2-3-(7)	2F-6-12	287+25		
MCZ 20657	?	218+3+15	14+18	3+2-1/2	2-3-(8)	2-6-13	175+16		
VM 12335-4	♂	213+3+14	14+18	2-1/2+2-1/2	2-3-(7)	2-8-11	247+21		
DZ 6442	-	216+3+14	14+14	3+2-1/2	3-(11)-(7)	3-8-11	228+118		
DZ 6432	-	222+3+13	14+16	3+2-1/2	2-3-(8)	2-8-10	235+118		
DZ 6439	-	213+3+14	14-5+16	2-1/2+2-1/2	2-3-(7)	2-8-12	263+24		
DZ 6436	-	218+3+14	14+16	2-1/2+2-1/2	2-----	2-6-12	213+18		
ZMU 26394	♀	221+3+17	14+16	3+2-1/2	2-3-(7)	0-6-12	139+14		
DZ 1266	-	214+3+14	13-4+16	3+2-1/2	2-4-(8)	2-6-15	227+20		
DZ 6520	-	214+3+14	14+16	3+2-1/2	2-3-(6)	2F-6-11	250+21		
DZ 6440	-	223+4+16	16+18	3+2-1/2	3-4-(7)	2-6-12	217+19		
DZ 2425	-	223+3+15	16+17-18	3+2-1/2	2-4-(8)	2F-6-11	262+22		
DZ 6438	-	221+4+15	14+17-18	3+2-1/2	2-3-(7)	2F-6-11	217+18		
DZ 7053	-	219+4+13	14+16	2-1/2+2-1/2	2-3-(7)	2-8-10	252+19		
DZ 7676	-	224+4+15	14+18	2-1/2+2-1/2	2-3-(7)	2-8-10	247+22		
DZ 7054	-	227+3+14	14+16-18	2-1/2+2-1/2	3-3-(7)	2F-6-10	243+21		
CG 2092	♀	216+3+14	14+18-19	3+2-1/2	2-3-(7)	0-7-10	239+20		
CG 2093	♂	226+3+14	14+17-18	2-1/2+2-1/2	2-3-(7)	2-6-11	207+19		
DZ 6433	-	219+3/4+15	15-16+18	3+2-1/2	2-3-(8)	2F-8-10	251+22		
DZ 1284	-	216+3+14	14+16	3+2-1/2	2-4-(7)	2F-5-10	149+13		
DZ 6461	-	227+3+14	14+18	3+2-1/2	2-4-(8)	2-6-14	247+22		
DZ 6443	-	228+4+16	14-15+16	3+2-1/2	2-3-(6)	2-10-14	210+18		
DZ 6667	-	231+3/4+15	14-15+15-16	-----	2-3-(7)	3-5---	278+24		
SMF 11813	♀	213+3+15	14+16	3+3	2-3-(6)	2F-6-12	254+21		
DZ 6437	-	225+3+15	14-15+18	3+2-1/2	2-3-(8)	2-7-9	261+20		

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